

$$\begin{aligned}
 \underline{E1} \quad & \int 3x^2 dx \\
 & = 3 \int x^2 dx \\
 & = 3 \cdot \frac{1}{2+1} x^{2+1} + C, \quad C \in \mathbb{R} \\
 & = 3 \cdot \frac{1}{3} x^3 + C \\
 & = x^3 + C
 \end{aligned}$$

TRK. $D(x^3 + C)$
 $= 3x^2 + 0 = 3x^2$

$$\begin{aligned}
 \underline{E2} \quad & \int (x^3 - 5) dx \\
 & = \int x^3 dx - \int 5 dx \\
 & = \frac{1}{4} x^4 - 5x + C
 \end{aligned}$$

$$\begin{aligned}
 \underline{E3} \quad & \int e^{3x} dx \\
 & = \frac{1}{3} \int \cancel{x} \cdot e^{3x} dx \\
 & \quad \swarrow \text{koef. termi} \quad \nearrow \text{sisäf. der.} \\
 & = \frac{1}{3} e^{3x} + C
 \end{aligned}$$

$$\begin{aligned}
 s(x) &= 3x \\
 s'(x) &= 3
 \end{aligned}$$

$$3 \cdot \frac{1}{3} = 1$$

$$\begin{aligned}
 \underline{E4} \quad & \int \sin 5x dx \\
 & = \frac{1}{5} \int \cancel{x} \sin 5x dx \\
 & = \frac{1}{5} (-\cos 5x) + C \\
 & = -\frac{1}{5} \cos 5x + C
 \end{aligned}$$

$$\begin{aligned}
 s(x) &= 5x \\
 s'(x) &= 5
 \end{aligned}$$

$$5 \cdot \frac{1}{5} = 1$$

E5 (kirjasta E3/s. 196)